Northampton County
Sensitive Natural Resource Area
Preservation Overlay District

Photo by Richard Wiseman

Northampton County is expected to experience extremely rapid growth over the next few years. There are growing concerns over the effect this growth will have on the county's critical natural resources, particularly groundwater and drinking water quality, bird habitat and migratory corridors, sensitive shoreline and upland areas, groundwater recharge areas and as prime agriculture lands. Furthermore, because the local economy is dependent on agriculture, seafood industries and increasingly tourism, protection of these unique resources is a high priority.

In 2002, as part of Northampton County's Special Area Management Planning effort, the Board of Supervisors appointed an ad hoc Citizen Advisory Committee to review the county's natural resources and recommend ways to better protect sensitive natural resource areas. The Committee's findings supported adoption of a Sensitive Natural Resource Area (SNRA) District overlay to manage land-use activities in these environmentally sensitive areas through the local zoning ordinance.

The Northampton County SNRA preservation overlay district will only effect new development. It does not apply to agriculture, silviculture and public safety activities.

Northampton County Special Area Management Plan

The Northampton County Special Area Management Plan (SAMP), was initiated in 1991 in an effort to create new enforceable policies designed to improve protection of the County's coastal resources and promotion of sustainable industries. The Northampton SAMP is a partnership between Northampton County and the Virginia Coastal Program at the Department of Environmental Quality, with funding from the National Atmospheric and Oceanic Administration, under the Coastal Zone Management Act. This legislation recognizes, among other things, the tremendous growth pressures facing coastal communities throughout the nation. However, the legal authority to protect coastal resources through land use regulation resides with local governance. In 1992, the Northampton County Board of Supervisors unanimously approved the County's participation in the SAMP. Total funds dedicated to the SAMP exceed 1.7 million match-free dollars. Completion of the SAMP is at a critical stage.

Sensitive Natural Resource Area District

The proposed Sensitive Natural Resource Area (SNRA) preservation overlay district, or SNRA District, consists of two types of natural resource areas:

1. Groundwater Recharge
2. Natural Community

The SNRA district requires development performance standards in the form of Best Management Practices (BMPs) that guide construction and how it relates to natural resources and their functions.

BMPs are structural and nonstructural land use practices proven to protect natural resources. In order to prevent loss and/or fragmentation of critical wildlife habitat; and the loss and degradation of groundwater recharge through impervious surfaces and nonpoint source pollution, any land disturbance greater than 2500 square feet in the SNRA District will require the use of certain BMPs. BMPs will be determined by the type of SNRA located on a parcel of land.

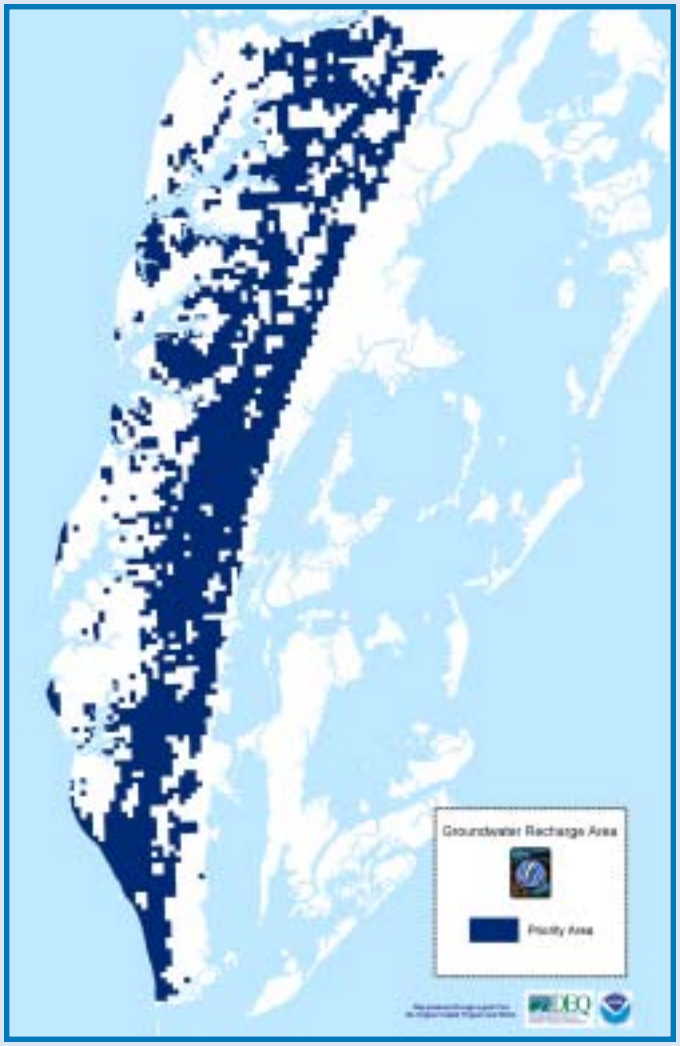
Sometimes BMPs are relatively simple, such as revegetating a disturbance site with 90% native plants, and sometimes they are more complex, such as construction of a groundwater recharge infiltration system for a large parking area. However, whether simple or complex, BMPs are site-specific. Professionally certified site plans will be required by all development except individual single family residential. Resources are available at the county level for these applicants to help develop site plans for a nominal fee. Adequate BMP requirements and correct installation will be determined through a site review by County Planning Department staff.

Groundwater Recharge SNRA Type

If the proposed development is located in an area with a priority classification of 4 or 5 on the groundwater recharge area priority classification map, the site plan for development must include a Recharge Management Plan.

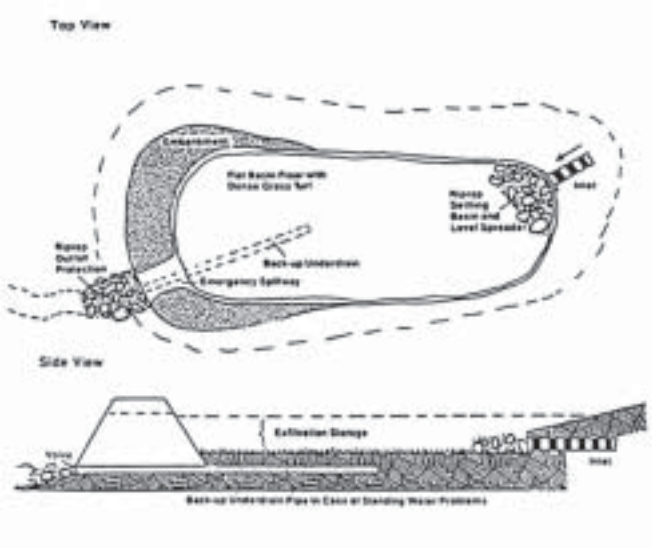
Performance standards for this SNRA type must maintain groundwater recharge rates that are at least 90% of original recharge rates upon completion of construction (calculations are determined by Virginia Stormwater Management Handbook.) To accomplish this rate, a site plan must include one or more of the following BMPs:

A. **Grassed swale:** A broad and shallow earthen channel vegetated with erosion resistant and flood-tolerant grasses. Check dams are strategically placed in the swale to encourage ponding behind them.

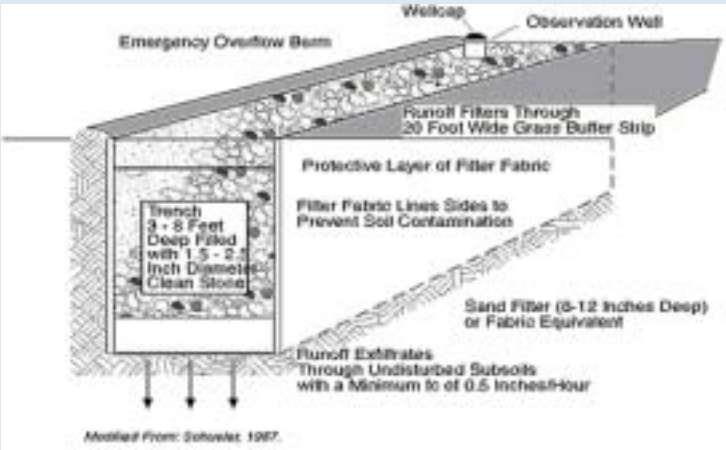


The groundwater recharge analysis was conducted using a GIS model that combined infiltration rates and groundwater recharge/discharge areas. Infiltration rate and groundwater recharge/discharge areas are the major naturally-occurring factors which effect overall groundwater recharge. This approach identified the geographic areas within the County that are most strategic for BMPs that enhanced groundwater replenishment.

B. **Infiltration basin:** A vegetated, open basin where stormwater runoff is stored until it gradually infiltrates into the soil.



C. **Infiltration trench:** A shallow, excavated trench backfilled with a coarse stone aggregate to create an underground reservoir. Stormwater runoff diverted into the trench gradually infiltrates into the surrounding soils from the bottom and sides of the trench. The trench can be either an open surface trench or an underground facility.



D. **Roof downspout system:** An infiltration trench practice intended for infiltrating rooftop runoff transported to the trench via roof downspout drains.

E. **Bioretention area:** Also called a "rain garden", this is a vegetated area where water ponds and then infiltrates through several layers of soil and sand.

From http://www.raingardens.org/

Natural Community SNRA Type

Performance standards in this SNRA type are intended to maintain natural community dynamics within a human environment to the greatest extent possible. Site designs must include BMPs that:

A. Maintain buffers between areas dominated by human activities and core wildlife habitat areas.

B. Maintain wildlife movement corridors.

The natural community analysis used GIS models from the Virginia Department of Conservation and Recreation-Division of Natural Heritage (Critical Conservation Sites Analysis) and the U.S. Geological Survey Biological Resource Division (GAP Analysis). Each analysis is designed to identify areas where natural resources are highly vulnerable to negative impacts from development. This information was then combined with Neotropical Migratory Bird studies (a cooperative effort of NOAA, Virginia Coastal Program-DEQ, DCR, Department of Game and Inland Fisheries, and the College of William and Mary). The final map delineates the geographic areas within the County that require BMPs in order to minimize the cumulative impacts of new development to the ecological health of the environment.

C. Minimize disturbance to native vegetation as much as possible. The maximum disturbance area allowed on the site is determined by parcel size. The ratios are outlined by the Table below:

Parcel Size	Maximum Disturbance Area
101 acres or more	4% of site or 4+ acres depending on lot size
51-100 acres	6% of site or 3 - 6 acres
11-51 acres	15% of site or 1.65 - 7.5 acres
4-10 acres	25% of site or 1 - 2.5 acres
4 acres or less	50% of site or 2 acres - 21,780 sq. ft.

D. Mimic native landscapes by replanting development disturbance areas with indigenous vegetation. Native vegetation provides food and cover for wildlife and survives better with less water, pesticides and fertilizers than most non-natives. Existing trees and shrub areas on the site that are removed or damaged as the result of land development activity shall be replaced with at least 90% native vegetation and in the following ratios:

Size of Tree Removed (inches in diameter at breast height)	Option A	Option B
6 to 12	2 trees	N/A
13 to 18	3 trees	1 tree and 3 shrubs
19 to 24	5 trees	3 trees and 6 shrubs
25 to 30	7 trees	5 trees and 9 shrubs
over 30	10 trees	7 trees and 12 shrubs

For more information about the SNRA Overlay District, please contact Kathryn Crawford, Northampton County Planning Department, at 757.678.5347 or e-mail: kcrawford@co.northampton.va.us.

For more information about improving your property for wildlife and water quality, please contact the Virginia Coastal Program at 804.698.4320, or e-mail: vgwitmer@deq.state.va.us, and request a copy of "Habitat Management Guide for Landowners: Migratory Birds of the Lower Delmarva" or "Bayscapes: Environmentally-Sound Landscape Management."

For information on the Annual Eastern Shore of Virginia Birding Festival visit http://www.esvachamber.org/festivals/birding/

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Maritime dune grassland- grasses that grow in dune areas. The dominant plants are saltmeadow cordgrass, American beachgrass, sea oats, bitter seabeach grass and seaside little bluestem. These plants help stabilize dune and shoreline areas.

Maritime dune woodland- Mixed deciduous pine forests of the back dunes protected from salt water spray. Dominant trees include live oak, bluejack oak, and sassafras, with loblolly pines. Shrubs include scrubby oaks and patches of sandheather. This Natural Community is considered globally and state rare.

Maritime mixed forest- This is the mixed forests sheltered by back dunes along the flanks of the shore. Vegetation is significantly influenced by oceanic factors. Typical trees include loblolly pine, water oak, southern red oak, and black cherry.

Maritime scrub- This is the mixed shrublands sheltered by back dunes along the flanks of the shore. Plants in this group generally occupy inland edges of dune areas that are protected from constant ocean salt spray. Vegetation includes northern bayberry, live oak, persimmon, and black cherry.

Other Natural Communities found in this district:

Coastal plain/Piedmont acidic seepage swamp- This is a groundwater fed wetland community that contains dense shrub and herbaceous vegetation. Typical shrubs and trees include sweetbay, poison sumac, highbush berries, possum-haw and smooth alder.

Mesic mixed hardwood forest - These forests receive moderate precipitation and generally thrive in nutrient poor soils. Typical tree canopies include mixtures of American beech, oaks, tulip-poplar, and hickories. Smaller associates include American hornbeam, flowering dogwood, and American holly.

Non-riverine swamp forest- seasonally flooded mixed or deciduous forests that occur on poorly drained peatlands. Dominant trees include bald cypress, swamp tupelo, and red maple. Smaller associates include red bay and sweet pepperbush. This Natural Community is considered globally uncommon to rare.

All photos by Dot Field